

CLAIMS

1. Flow connector comprising first and second flowpath components engageable in an engagement direction, the first and second components having respective ports defining a flow path therebetween when connected; the connector
5 further comprising a sealing member moveable in said engagement direction between a first position in said flow path, in which flow between said ports is prevented, and a second position out of said flow path, in which flow between said ports is permitted.
- 10 2. Flow connector according to claim 1, wherein said first and second components are respectively configured as male and female components.
- 15 3. Flow connector according to claim 2, wherein the engagement direction corresponds to an axial direction of said male and female components.
4. Flow connector according to claim 2, wherein said sealing member forms part of said male component.
- 20 5. Flow connector according to claim 4, wherein said sealing member prevents flow through said male component when disconnected from the female component.
6. Flow connector according to claim 5, wherein said male component comprises a tubular member insertable in a bore in said female member; said sealing member being moveable to said first position in a bore of said tubular member.

7. Flow connector according to claim 1, wherein the flow path through one of said ports is in a direction other than said engagement direction.

5 8. Flow connector according to claim 7 wherein said flow path through said one port is predominantly in a direction normal to said engagement direction.

9. Flow connector according to claim 7, wherein said one port is formed in said bore in said female member.

10 10. Flow connector according to claim 8, wherein said one port is formed in said bore in said female member.

11. Flow connector according to claim 6, wherein said sealing member is
15 moveable from a first position in said bore of said tubular member to a second position in said bore in said female member, thereby to allow flow through said one port formed in said bore in said female member.

12. Flow connector according to claim 11, wherein said female member
20 includes a further sealing member, moveable within said bore of said female member to control flow through said one port formed in said bore in said female member.

13. Flow connector according to claim 12, wherein said sealing member and said further sealing member each form part of respective assemblies, the further sealing member assembly being engageable by the sealing member assembly, thereby to move said further sealing member assembly.

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14. Flow connector according to any preceding claim, wherein said sealing member forms part of a sealing member assembly comprising a plunger supporting said sealing member, said plunger being tapered in the engagement direction, thereby to reduce the resistance to flow through said one port in a
10 direction other than said axial direction.

15. Flow connector according to any one of claims 6 to 13, wherein said sealing member forms part of a sealing member assembly comprising a further tubular member slidably arranged in said tubular member and connected by means
15 of a flat plate to a plunger supporting said sealing member.

16. Flow connector according to any one of claims 6 to 13, wherein said sealing member forms part of a sealing member assembly comprising a further tubular member slidably arranged in said tubular member and having a further port
20 formed in its circumferential wall, said sealing member being located on said further tubular member between said further port and one end of the further tubular member.

17. Flow connector according to claim 16, wherein said further tubular member has a bore having a first portion communicating with said further port and which lies at an angle relative to said axial direction.

5 18. Flow connector according to claim 16, wherein said angle is in a range of from 30° to 60°.

19. Flow connector according to claim 17, wherein said angle is substantially 45°.

10 20. Flow connector according to claim 17, wherein the bore of said further tubular member has a second portion substantially aligned with said axial direction, the transition between said first and second portions being configured so as to reduce flow losses.

15 21. Flow connector according to claim 13, wherein there are substantially no cavities between said sealing member and said further sealing member when respective assemblies are engaged, thereby avoiding retention of fluid after the engagement is broken.

20 22. Flow connector according to claim 21, wherein said sealing member and further sealing member assemblies each have respectively engageable faces, said sealing member being located adjacent the face of said sealing member

assembly and said further sealing member being located adjacent the face of said further sealing member assembly.

23. Flow connector according to claim 21, wherein said respectively
5 engageable faces are flat and engage over substantially all their area, thereby
avoiding retention of fluid after engagement is broken.

24. Flow connector according to claim 13, wherein at least one of said
sealing member and said further sealing member is spring biased towards a position
10 in which fluid flow is prevented.

25. Flow connector according to claim 5 and comprising an actuating
member for moving said sealing member in said engagement direction.

15 26. Flow connector according to claim 25 and comprising a latch
configured to secure said first and second components together.

27. Flow connector according to claim 26, wherein said actuating
member is configured to engage said latch means and move said sealing member.

20 28. Flow connector according to claim 27, wherein said actuating
member is part of said male component.

29. Flow connector according to claim 28, wherein said actuating
member is an external collet.

30. Flow connector according to claim 2, wherein the bore of said female member has a mouth for receiving said male member, and wherein the external profile of said female member tapers away in said axial direction from said region
5 of said female member adjacent said mouth.

31. Flow connector according to claim 2, wherein said female member includes an attachment for attaching said female member to the wall of a fluid channel.

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32. Flow connector according to claim 31, wherein said attachment is operable from one side only of said wall of a fluid channel.

33. Flow connector according to claim 32, wherein said attachment is a screw thread engageable with a corresponding screw thread on said wall of a fluid
15 channel.

34. Flow connector comprising male and female flowpath components, the male component comprising a tubular member engageable in an engagement direction with a bore of the female member, the male and female components
20 having respective ports defining a flow path therebetween when connected, the connector further comprising a sealing member moveable in said engagement direction between a first position in the bore of the tubular member and between the ports, in which flow between said ports is prevented, and a second position out of said flow path, in which flow between said ports is permitted, wherein the sealing

member forms part of a sealing member assembly comprising a further tubular member slidably arranged in said tubular member and having a further port formed in its circumferential wall, said sealing member being located on said further tubular member between said further port and one end of the further tubular member.